

VR in STEM Education and Outreach – Brown, et al.

Appendix B. Critical Thinking Rubric

This rubric was used by judges to evaluate group changes in critical thinking skills and is a modified version of the Critical Thinking VALUE Rubric developed by the Association of American Colleges and Universities.

Group # _____	Case Study Topic: _____				Benchmark 1
	Capstone 4	3	Milestones 2	1	
Explanation of Issues	Issue/problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/or backgrounds unknown.	Issue/problem to be considered critically is stated without clarification or description.	
Evidence and Definitions <i>Selecting and using information to investigate a point of view or conclusion</i>	Information is taken from source(s) with enough interpretation/evaluation to develop a comprehensive analysis or synthesis. Definitions are correct, and integrated/revisited throughout presentation.	Information is taken from source(s) with enough interpretation/evaluation to develop a coherent analysis or synthesis. Definitions are correct and somewhat integrated/revisited throughout presentation.	Information is taken from source(s) with some interpretation/evaluation, but not enough to develop a coherent analysis or synthesis. Definitions are correct but may be incomplete, and/or are not integrated/revisited.	Information is taken from source(s) without any interpretation/evaluation. Definitions are insufficient and/or incorrect.	
Development of a Cohesive Hypothesis	Presentation is cohesive and builds story, takes other viewpoints (other presenters) into account. Specific position (perspective/hypothesis) is clearly thought out, taking into account the complexities of an issue	Presentation follows logical progression, but needs improvement. Builds on <i>some</i> other ideas/presenters. Specific position (perspective, thesis/hypothesis) takes into account some complexities of an issue.	Presentation is minimally cohesive, and integrates/incorporates few to no ideas from other viewpoints (other presenters) Specific position (perspective, thesis/hypothesis) is minimally explained, defended or supported	Presentation is fragmented, lacks logical progression, and ideas are not tied together. Specific position (perspective, thesis/hypothesis) is stated, but not well thought out and/or not explained	
Conclusions and Related Outcomes (implications and consequences)	Conclusions are logical and reflect student's informed evaluation and ability to place evidence/perspectives in priority order. Conclusion revisits important/critical case information that supports hypothesis with relevant evidence.	Conclusion is logically tied to a range of information. Conclusion revisits some important case information that supports hypothesis with relevant evidence.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion). Conclusion minimally revisits important case information and lacks supporting/relevant evidence.	Conclusion is inconsistently tied to some information discussed and oversimplified. Conclusion does not revisit important case information. Concluding hypothesis is not well supported.	
Student's Position (perspective, thesis, hypothesis) (questions after)	Limits of position are acknowledged; other points of view are synthesized within position. Answers to questions demonstrate thorough ability to apply knowledge to critically evaluate novel information	Limits of position are somewhat acknowledged. Others' point of view is acknowledged within position. Answers to questions demonstrate some ability to apply knowledge to critically evaluate novel information	Limits of position are not acknowledged. Answers to questions demonstrate limited ability to apply knowledge to critically evaluate novel information	Limits of position are not acknowledged. Answers to questions demonstrate little to no ability to apply knowledge to critically evaluate novel information	

Notes and Comments: